



AFCTN Test Report 93-051

AFCTB-ID
93-083



Technical Raster Transfer



Using:

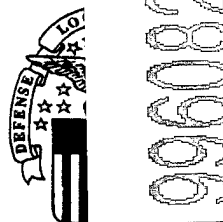
Cubic Defense Systems' Data



MIL-R-28002A (Raster)



Quick Short Test Report



20 August 1993



Prepared for

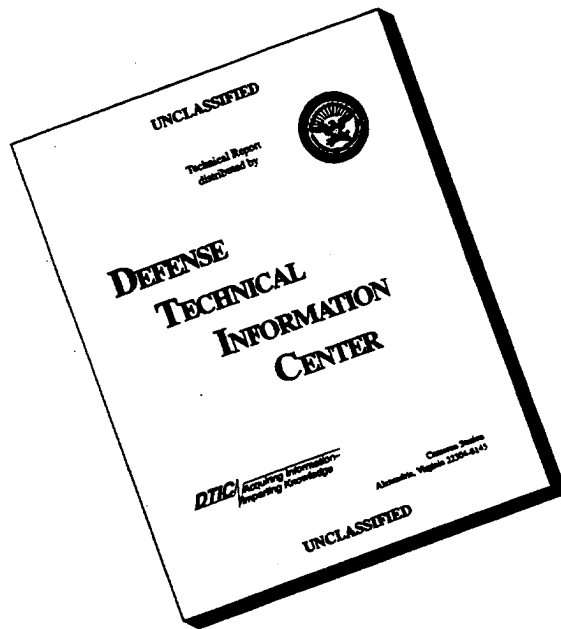
Electronic Systems Center

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Quick Short Test Report

20 August 1993

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1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-Cycle Support (CALs) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALs standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALs initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze Cubic Defense System's interpretation and use of the CALS standards, in transferring technical Raster data. Cubic used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on two 9-track magnetic tapes. Both tapes contained the same files but were recorded at different densities.

2. Test Parameters

Test Plan: AFCTB 93-083

Date of Evaluation: 20 August 1993

Evaluator: George Elwood
Air Force CALS Test Bed
DET 2 HQ ESC/ENCP
4027 Colonel Glenn Hwy
Suite 300
Dayton OH 45431-1672

Data Originator: John Akin
Cubic Defense Systems
9333 Balboa Avenue
P.O. Box 85587
San Diego CA 92186-5587
(619) 277-6780 x2785

Data Description: Technical Raster Test (each tape)
6 Document Declaration files
20 Raster files

Data Source System: 1840

HARDWARE

SOFTWARE Unknown

Unknown

Raster

HARDWARE

SOFTWARE Unknown

Unknown

Evaluation Tools Used:

MIL-STD-1840A (TAPE)

SUN 3/280

AFCTN Tapetool v1.2.10 UNIX
XSoft CAPS/CALS v40.4

MIL-R-28002 (Raster)

SUN SparcStation 2

ArborText g42tiff
Carberry CADLeaf Plus 3.1
AFCTN validg4
AFCTN xrastb.sun4
IGES Data Analysis (IDA) IGESView 3.0
Island Graphics IslandPaint 3.0

PC 486/50

AFCTN validg4
IDA IGESView Windows
Inset Systems HiJaak Window V1.0

Standards

Tested:

MIL-STD-1840A
MIL-R-28002A

3. 1840A Analysis

3.1 External Packaging

The tapes arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a box in accordance with ASTM D 3951. The exterior of the box was not marked with a magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tapes were enclosed in a barrier bag as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reels showed the labels indicating the recording density as required by MIL-STD-1840A, para. 5.3.1. Enclosed in the box was a packing list showing all files that were recorded on both tapes.

3.2 Transmission Envelope

The two 9-track tapes received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

3.2.1 Tape One (88)

3.2.1.1 Tape Formats

The first tape was run through the AFCTN Tapetool v1.2.10 utility. No errors were encountered while evaluating the contents of the tape labels. However, 10 notes were generated during this process.

A note was reported on the tape label version. MIL-STD-1840A permits the use of both version three and four. The use of the most current standard should be used and noted.

Nine notes related to the tape label Record Length field for Type D files. Type D files contain variable length records that do not span blocks. All of the Type D files written on the tape were flagged with an illegal value for Record Length. The D001 through D006 files were expected to be Type D according to MIL-STD-1840A. The AFCTN Tapetool Software is expecting a value of 260 in the Record Length field but encountered a record length of 88. MIL-STD-1840A

para. 5.2.1.3 requires the variable record size be a maximum of 256 bytes. ANSI X3.27 para. 7.2.3 further states that the length of a Record Control Word (RCW) must be included in a Measured Data Unit (MDU) record length computation. This adds four bytes to the 256 for a MDU total of 260 bytes. ANSI X3.27 para. 8.5.2.6 states that the Record Length field for Type D files shall contain the maximum length of a MDU. While MIL-STD-1840A permits variable length records. Some software programs are sensitive to the number 260 because it is used to limit the record size when unblocking data. Some systems need this value to declare the maximum allowable record size, as an attribute, of a file when it is created.

The tape was read using the XSoft CAPS read1840A utility without any reported errors.

Tape one meets the CALS MIL-STD-1840A for physical requirements.

3.2.1.2 Declaration and Header Fields

Six errors were found in the Document Declaration files. All six Document Declaration files were reported with an invalid change level. Shown below is an example of the errors reported. The chglvl record should be either the word ORIGINAL or the revision number, a change level number, and then the date. The submitted example is missing either a revision number or change level.

chglvl: C,19930308

*** ERROR (MIL-STD-1840A; 5.1.1.2) - Invalid change level encountered.

*** NOTE (MIL-STD-1840A; 5.1.1.2) - Change level should be the word ORIGINAL or a Revision Number followed by a Change Level Number followed by a Change Level Date. They should be separated by a comma or space.

No errors were reported in any of the data file headers. Because of the reported errors in the Document Declaration files, tape one does not meet the CALS MIL-STD-1840A requirements.

3.2.2 Tape Two (260)

3.2.2.1 Tape Formats

The second tape evaluated was recorded at 1600 BPI. When the tape was read an I/O error was reported by the AFCTN Tapetool. The error appeared to be at the end of the data written to the tape. Because of the error the header records were not evaluated by the software.

Starting with the second Raster file (D001R002), 19 of the 20 included files had reported errors in the EOF block marker. The block count did not match the expected count. The tape writing utility should count the number of blocks written and place this information in the EOF tape label. Shown below in a sample of the error.

Block Count: 000014

Implementation Identifier:

*** ERROR (ANSI X3.27; 8.5.1.13) - EOF1 Block Count does not equal
to the actual block count. Expected => 14; Actual => 4

When the tape was read using the XSoft CAPS read1840A utility, the same error was reported. The system also hung at the end of the tape indicating the end of volume mark was missing. The tape reading utilities were still looking for additional information.

Tape two does not meet the CALS MIL-STD-1840A for physical requirements.

3.2.2.2 Declaration and Header Fields

A visual inspection of the Document Declaration files and data file headers showed the same errors as defined in the first tape.

Because of the reported errors in the Document Declaration files tape two does not meet the CALS MIL-STD-1840A requirements.

4. IGES Analysis

The tapes contained no Initial Graphics Exchange Specification (IGES) files.

5. SGML Analysis

The tapes contained no Standard Generalized Markup Language (SGML) files.

6. Raster Analysis

Both tapes contained 20 Raster files each. The files were compared between the tapes and found to be the same. The error checking was completed using the files from tape one.

All files were evaluated using the AFCTN *validg4* utility. This program reported that most of the files failed to meet the CALS MIL-R-28002A specification. All of the errors relate to missing EOF coding. Samples of the *validg4* error logs are included in the Appendix of this report.

The files were read into the AFCTN *xrastb.sun4* viewing utility. This utility reported the missing EOF coding but was able to display the files. All files appeared to be clean with few noted orphan pixels. All images appeared to have a minor slant.

The AFCTB has several tools for viewing Raster files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The files were converted using ArborText's *g42tiff* utility without a reported error. The resulting files were read into Island Graphics' *IslandPaint* and displayed. The missing EOF coding was not reported.

The Raster files were read into Carberry's *CADLeaf* software without a reported error. The images were displayed with

the slant being noted. The missing EOF coding was not noted.

The files were read into IDA's *IGESView* and *IGESView for Windows* and displayed. The Sparc UNIX version of the software reported some of the missing EOF coding.

The files were read into Inset Systems' *HiJaak for Windows* and displayed without a reported error.

The Raster files were converted using Rosetta Technologies' *Prepare* without a reported error. The resulting files were read into *Preview* and displayed.

The included Raster files on these tapes do not meet the MIL-R-28002A specification.

7. CGM Analysis

The tapes contained no Computer Graphics Metafile (CGM) files.

8. Conclusions and Recommendations

The physical structure of the two tapes, submitted by Cubic Defense Systems, did not meet MIL-STD-1840A requirements. Both tapes had errors in the Document Declaration files. Tape two had errors with all but one Raster file. The reported error was an incorrect EOF block count.

Most of the Raster files on both tapes had a reported error. The reported error was missing EOF coding. However, even with this error, all of the utilities available in the AFCTB were able to display the images. The Raster files, on both tapes, do not meet the CALS MIL-R-28002A specification.

The tapes do not meet the CALS MIL-STD-1840A requirements.

9. Appendix A - Tapetool Report Logs

9.1 Tape One

9.1.1 Tape Catalog

CALS Test Network Catalog Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Fri Aug 20 12:00:36 1993

MIL-STD-1840A File Catalog

File Set Directory: /cals/u1210/Set015

Page: 1

File Name	File Type	Record Format/ Length	Block Length/Total	Selected/ Extracted
D001	Document Declaration	D/00088	02048/000001	Extracted
*** NOTE (MIL-STD-1840A; 5.2.1.3) - Unexpected maximum variable record size encountered. Header => 88, Expected => 260				
*** NOTE (ANSI X3.27; 8.5.2.6) - Record Length for Recording Format Type D shall be the maximum length of a Measured Data Unit (MDU).				
*** NOTE (ANSI X3.27; 7.2.3) - A variable length record shall be contained in a MDU. A MDU consists of a four byte Record Control Word (RCW) followed immediately by the variable record.				
*** NOTE (ANSI X3.4) - A Record Control Word shall consist of four characters that express the sum of the lengths of the RCW and the variable record.				
D002	Document Declaration	D/00088	02048/000001	Extracted
*** NOTE (MIL-STD-1840A; 5.2.1.3) - Unexpected maximum variable record size encountered. Header => 88, Expected => 260				
D003	Document Declaration	D/00088	02048/000001	Extracted
*** NOTE (MIL-STD-1840A; 5.2.1.3) - Unexpected maximum variable record size encountered. Header => 88, Expected => 260				
D004	Document Declaration	D/00088	02048/000001	Extracted
*** NOTE (MIL-STD-1840A; 5.2.1.3) - Unexpected maximum variable record size encountered. Header => 88, Expected => 260				
D005	Document Declaration	D/00088	02048/000001	Extracted

*** NOTE (MIL-STD-1840A; 5.2.1.3) - Unexpected maximum variable record size encountered. Header => 88, Expected => 260

D006 Document Declaration D/00088 02048/000001 Extracted
*** NOTE (MIL-STD-1840A; 5.2.1.3) - Unexpected maximum variable record size encountered. Header => 88, Expected => 260

D001R001	Raster	F/00128 02048/000010	Extracted
D001R002	Raster	F/00128 02048/000004	Extracted
D001R003	Raster	F/00128 02048/000006	Extracted
D001R004	Raster	F/00128 02048/000008	Extracted
D001R005	Raster	F/00128 02048/000013	Extracted
D001R006	Raster	F/00128 02048/000013	Extracted
D001R007	Raster	F/00128 02048/000007	Extracted
D002R001	Raster	F/00128 02048/000015	Extracted
D002R002	Raster	F/00128 02048/000007	Extracted
D002R003	Raster	F/00128 02048/000008	Extracted
D002R004	Raster	F/00128 02048/000013	Extracted
D002R005	Raster	F/00128 02048/000006	Extracted
D002R006	Raster	F/00128 02048/000012	Extracted
D003R001	Raster	F/00128 02048/000059	Extracted
D004R001	Raster	F/00128 02048/000043	Extracted
D005R001	Raster	F/00128 02048/000037	Extracted
D006R001	Raster	F/00128 02048/000098	Extracted
D006R002	Raster	F/00128 02048/000033	Extracted
D006R003	Raster	F/00128 02048/000034	Extracted
D006R004	Raster	F/00128 02048/000028	Extracted

Catalog Process terminated with 0 error(s), 0 warning(s), and 9 note(s).

9.1.2 Tape Evaluation Log

CALS Test Network Tape Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Fri Aug 20 12:00:10 1993

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1CALS01

3

Label Identifier: VOL1

Volume Identifier: CALS01

Volume Accessibility:

Owner Identifier:

Label Standard Version: 3

*** NOTE (ANSI X3.27; 8.3.1.8) - The Label Standard Version should be 4 to
represent the current level of ANSI X3.27.

HDR1D001 CALS0100010001000100 93231 93231 000000DECFILE11A

Label Identifier: HDR1

File Identifier: D001

File Set Identifier: CALS01

File Section Number: 0001

File Sequence Number: 0001

Generation Number: 0001

Generation Version Number: 00

Creation Date: 93231

Expiration Date: 93231

File Accessibility:

Block Count: 000000

Implementation Identifier: DECFILE11A

HDR2D0204800088

00

Label Identifier: HDR2

Recording Format: D

Block Length: 02048

Record Length: 00088

Offset Length: 00

***** Tape Mark *****

Actual Block Size Found = 2048 Bytes.

Number of data blocks read = 1.

***** Tape Mark *****

EOF1D001 CALS0100010001000100 93231 93231 000001DECFILE11A

Label Identifier: EOF1
File Identifier: D001
File Set Identifier: CALS01
File Section Number: 0001
File Sequence Number: 0001
Generation Number: 0001
Generation Version Number: 00
Creation Date: 93231
Expiration Date: 93231
File Accessibility:
Block Count: 000001
Implementation Identifier: DECFILE11A

EOF2D0204800088

00

Label Identifier: EOF2
Recording Format: D
Block Length: 02048
Record Length: 00088
Offset Length: 00

<<<< PART OF LOG REMOVED HERE >>>>

HDR1D001R001 CALS0100010007000100 93231 93231 000000DECFILE11A

Label Identifier: HDR1
File Identifier: D001R001
File Set Identifier: CALS01
File Section Number: 0001
File Sequence Number: 0007
Generation Number: 0001
Generation Version Number: 00
Creation Date: 93231
Expiration Date: 93231
File Accessibility:
Block Count: 000000
Implementation Identifier: DECFILE11A

HDR2F0204800128 M 00

Label Identifier: HDR2
Recording Format: F
Block Length: 02048
Record Length: 00128
Offset Length: 00

***** Tape Mark *****

Actual Block Size Found = 2048 Bytes.

Number of data blocks read = 10.

***** Tape Mark *****

EOF1D001R001 CALS0100010007000100 93231 93231 000010DECFILE11A

Label Identifier: EOF1
File Identifier: D001R001
File Set Identifier: CALS01
File Section Number: 0001
File Sequence Number: 0007
Generation Number: 0001
Generation Version Number: 00
Creation Date: 93231
Expiration Date: 93231
File Accessibility:
Block Count: 000010
Implementation Identifier: DECFILE11A

EOF2F0204800128 M 00

Label Identifier: EOF2
Recording Format: F
Block Length: 02048
Record Length: 00128
Offset Length: 00

<<<< PART OF LOG REMOVED HERE >>>>

End of Volume CALS01

End Of Tape File Set

Deallocating /dev/rmt0...

Tape Import Process terminated with 0 error(s), 0 warning(s),
and 1 note(s).

9.1.3 Tape File Set Validation Log

CALS Test Network File Set Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Fri Aug 20 12:00:37 1993

MIL-STD-1840A File Set Evaluation Log

File Set: Set015

Found file: D001

Extracting Document Declaration Header Records...

Evaluating Document Declaration Header Records...

srcsys: CUBIC DEFENSE SYSTEMS INC. 9333 BALBOA AVE. SAN DIEGO, CA 92123 FSCM 94987

srcdocid: 147345

srcrelid: NONE

chglvl: C,19930308

*** ERROR (MIL-STD-1840A; 5.1.1.2) - Invalid change level encountered.

*** NOTE (MIL-STD-1840A; 5.1.1.2) - Change level should be the word ORIGINAL
or a Revision Number followed by a Change Level Number followed by
a Change Level Date. They should be separated by a comma or space.

dteisu: 19770324

dstsys: ASC/YIL

dstdocid: NONE

dstrelid: NONE

dtetrm: 19930310

dlvacc: A011R, E010R

filcnt: R7

ttlcls: UNCLASSIFIED

doccls: UNCLASSIFIED

doctyp: Document/Drawing List

docttl: ADHESIVE

1 error(s), 0 warning(s), and 1 note(s) were encountered
in Document Declaration File D001.

Found file: D001R001

Extracting Raster Header Records...

Evaluating Raster Header Records...

srcdocid: DL147345

94987 C

00010001UMEAHN

dstdocid: NONE

txtfilid: NONE

figid: NONE
srcgph: NONE
doccls: UNCLASS
rtype: 1
rorient: 000,270
xpelcnt: 001888,002400
rdensty: 0200
notes: NONE

Saving Raster Header File: D001R001_HDR
Saving Raster Data File: D001R001_GR4

<<<<< PART OF LOG REMOVED HERE >>>>>

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
No errors were encountered during file count verification.
File Count verification complete.

A total of 1 error(s), 0 warning(s), and 1 note(s) were
encountered in Document D001.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
No errors were encountered during file count verification.
File Count verification complete.

A total of 1 error(s), 0 warning(s), and 1 note(s) were
encountered in Document D006.

A grand total of 6 error(s), 0 warning(s), and 6 note(s) were
encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

9.2 Tape Two

9.2.1 Tape Scan Log

CALS Test Network Tape Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Sun Aug 22 15:13:54 1993

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1CALS01

4

Label Identifier: VOL1
Volume Identifier: CALS01
Volume Accessibility:
Owner Identifier:
Label Standard Version: 4

HDR1D001 CALS0100010001000000 93231 00000 000000

Label Identifier: HDR1
File Identifier: D001
File Set Identifier: CALS01
File Section Number: 0001
File Sequence Number: 0001
Generation Number: 0000
Generation Version Number: 00
Creation Date: 93231
Expiration Date: 00000
File Accessibility:
Block Count: 000000
Implementation Identifier:

HDR2D0204800260

00

Label Identifier: HDR2
Recording Format: D
Block Length: 02048
Record Length: 00260

Offset Length: 00

***** Tape Mark *****

Actual Block Size Found = 2048 Bytes.

Number of data blocks read = 1.

***** Tape Mark *****

EOF1D001 CALS0100010001000000 93231 00000 000001

Label Identifier: EOF1
File Identifier: D001
File Set Identifier: CALS01
File Section Number: 0001
File Sequence Number: 0001
Generation Number: 0000
Generation Version Number: 00
Creation Date: 93231
Expiration Date: 00000
File Accessibility:
Block Count: 000001
Implementation Identifier:

EOF2D0204800260

00

Label Identifier: EOF2
Recording Format: D
Block Length: 02048
Record Length: 00260
Offset Length: 00

***** Tape Mark *****

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

***** Tape Mark *****

HDR1D001R002 CALS0100010008000000 93231 00000 000000

Label Identifier: HDR1
File Identifier: D001R002
File Set Identifier: CALS01
File Section Number: 0001
File Sequence Number: 0008
Generation Number: 0000
Generation Version Number: 00
Creation Date: 93231

Expiration Date: 00000
File Accessibility:
Block Count: 000000
Implementation Identifier:

HDR2F0204800128

00

Label Identifier: HDR2
Recording Format: F
Block Length: 02048
Record Length: 00128
Offset Length: 00

***** Tape Mark *****

Actual Block Size Found = 2048 Bytes.

Number of data blocks read = 4.

***** Tape Mark *****

EOF1D001R002

CALS0100010008000000 93231 00000 000014

Label Identifier: EOF1
File Identifier: D001R002
File Set Identifier: CALS01
File Section Number: 0001
File Sequence Number: 0008
Generation Number: 0000
Generation Version Number: 00
Creation Date: 93231
Expiration Date: 00000
File Accessibility:
Block Count: 000014
Implementation Identifier:

*** ERROR (ANSI X3.27; 8.5.1.13) - EOF1 Block Count does not equal
to the actual block count. Expected => 14; Actual => 4

EOF2F0204800128

00

Label Identifier: EOF2
Recording Format: F
Block Length: 02048
Record Length: 00128
Offset Length: 00

***** Tape Mark *****

<<<< PART OF LOG FILE REMOVED HERE >>>>

***** Tape Mark *****

HDR1D006R004 CALS0100010026000000 93231 00000 000000

Label Identifier: HDR1
File Identifier: D006R004
File Set Identifier: CALS01
File Section Number: 0001
File Sequence Number: 0026
Generation Number: 0000
Generation Version Number: 00
Creation Date: 93231
Expiration Date: 00000
File Accessibility:
Block Count: 000000
Implementation Identifier:

HDR2F0204800128

00

Label Identifier: HDR2
Recording Format: F
Block Length: 02048
Record Length: 00128
Offset Length: 00

***** Tape Mark *****

Actual Block Size Found = 2048 Bytes.

Number of data blocks read = 28.

***** Tape Mark *****

EOF1D006R004 CALS0100010026000000 93231 00000 000454

Label Identifier: EOF1
File Identifier: D006R004
File Set Identifier: CALS01
File Section Number: 0001
File Sequence Number: 0026
Generation Number: 0000
Generation Version Number: 00
Creation Date: 93231
Expiration Date: 00000
File Accessibility:
Block Count: 000454
Implementation Identifier:

*** ERROR (ANSI X3.27; 8.5.1.13) - EOF1 Block Count does not equal
to the actual block count. Expected => 454; Actual => 28

EOF2F0204800128

00

Label Identifier: EOF2
Recording Format: F
Block Length: 02048
Record Length: 00128
Offset Length: 00

***** Tape Mark *****

Rewinding tape to load point...

Deallocating /dev/rmt0...

Tape Import Process terminated with 20 error(s), 0 warning(s),
and 0 note(s).

9.2.2 XSoft CAPS Tape Read Log

```
/cals/caps/Bin/read1840A: --- Read declaration file 'D001' ---
/cals/caps/Bin/read1840A: --- Read declaration file 'D002' ---
/cals/caps/Bin/read1840A: --- Read declaration file 'D003' ---
/cals/caps/Bin/read1840A: --- Read declaration file 'D004' ---
/cals/caps/Bin/read1840A: --- Read declaration file 'D005' ---
/cals/caps/Bin/read1840A: --- Read declaration file 'D006' ---
/cals/caps/Bin/read1840A: writing data file 'aftb9383b/NONE/NONE1.R.cci'.
/cals/caps/Bin/read1840A: writing data file 'aftb9383b/NONE/NONE2.R.cci'.
*** ERROR - block counts do not match ***
    block count in trailer: 14, blocks read: 4
/cals/caps/Bin/read1840A: writing data file 'aftb9383b/NONE/NONE3.R.cci'.
*** ERROR - block counts do not match ***
    block count in trailer: 20, blocks read: 6
/cals/caps/Bin/read1840A: writing data file 'aftb9383b/NONE/NONE4.R.cci'.
*** ERROR - block counts do not match ***
    block count in trailer: 28, blocks read: 8
/cals/caps/Bin/read1840A: writing data file 'aftb9383b/NONE/NONE5.R.cci'.
*** ERROR - block counts do not match ***
    block count in trailer: 41, blocks read: 13
/cals/caps/Bin/read1840A: writing data file 'aftb9383b/NONE/NONE6.R.cci'.
*** ERROR - block counts do not match ***
    block count in trailer: 54, blocks read: 13
/cals/caps/Bin/read1840A: writing data file 'aftb9383b/NONE/NONE7.R.cci'.
*** ERROR - block counts do not match ***
```

block count in trailer: 61, blocks read: 7

/cals/caps/Bin/read1840A: writing data file 'aftb9383b/NONE/NONE1.R.cci'.
*** ERROR - block counts do not match ***
block count in trailer: 76, blocks read: 15

/cals/caps/Bin/read1840A: writing data file 'aftb9383b/NONE/NONE2.R.cci'.
*** ERROR - block counts do not match ***
block count in trailer: 83, blocks read: 7

/cals/caps/Bin/read1840A: writing data file 'aftb9383b/NONE/NONE3.R.cci'.
*** ERROR - block counts do not match ***
block count in trailer: 91, blocks read: 8

/cals/caps/Bin/read1840A: writing data file 'aftb9383b/NONE/NONE4.R.cci'.
*** ERROR - block counts do not match ***
block count in trailer: 104, blocks read: 13

/cals/caps/Bin/read1840A: writing data file 'aftb9383b/NONE/NONE5.R.cci'.
*** ERROR - block counts do not match ***
block count in trailer: 110, blocks read: 6

/cals/caps/Bin/read1840A: writing data file 'aftb9383b/NONE/NONE6.R.cci'.
*** ERROR - block counts do not match ***
block count in trailer: 122, blocks read: 12

/cals/caps/Bin/read1840A: writing data file 'aftb9383b/NONE/NONE1.R.cci'.
*** ERROR - block counts do not match ***
block count in trailer: 181, blocks read: 59

/cals/caps/Bin/read1840A: writing data file 'aftb9383b/NONE/NONE1.R.cci'.
*** ERROR - block counts do not match ***
block count in trailer: 224, blocks read: 43

/cals/caps/Bin/read1840A: writing data file 'aftb9383b/NONE/NONE1.R.cci'.
*** ERROR - block counts do not match ***
block count in trailer: 261, blocks read: 37

/cals/caps/Bin/read1840A: writing data file 'aftb9383b/NONE/NONE1.R.cci'.
*** ERROR - block counts do not match ***
block count in trailer: 359, blocks read: 98

/cals/caps/Bin/read1840A: writing data file 'aftb9383b/NONE/NONE2.R.cci'.
*** ERROR - block counts do not match ***
block count in trailer: 392, blocks read: 33

/cals/caps/Bin/read1840A: writing data file 'aftb9383b/NONE/NONE3.R.cci'.
*** ERROR - block counts do not match ***
block count in trailer: 426, blocks read: 34

/cals/caps/Bin/read1840A: writing data file 'aftb9383b/NONE/NONE4.R.cci'.
*** ERROR - block counts do not match ***
block count in trailer: 454, blocks read: 28

10. Appendix D - Detailed Raster Analysis

10.1 Error Log validg4

density = 200
path length = 1888
scan lines = 2400
bit format = MSB

error, scan length exceeds pel count
s=401 a0=0 bstop=3024 pos=3078

file = r106.cal

density = 0
path length = 0
scan lines = 0
bit format = MSB

error, scan length exceeds pel count
s=1 a0=0 bstop=843 pos=2

file = r107.cal

density = 200
path length = 2048
scan lines = 2560
bit format = MSB

error getcode, no match in 12 bits
s=2560 word=2f0 pos=28326

file = r201.cal

density = 200
path length = 2048
scan lines = 2560
bit format = MSB

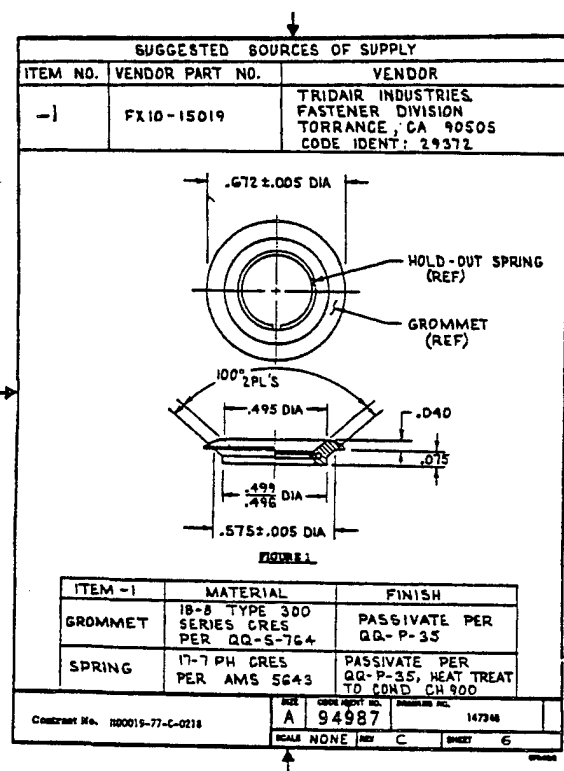
error getcode, no match in 12 bits
s=2560 word=2f0 pos=10774

density = 200
path length = 2048
scan lines = 2560
bit format = MSB

error getcode, no match in 12 bits
s=2560 word=2f0 pos=21988

file = r206.cal

10.1.1 Output IGESView - D003R001



NOTES: UNLESS OTHERWISE SPECIFIED

1. INTERPRET DRAWING IN ACCORDANCE WITH DOD-STD-100.
2. DIMENSIONS AND TOLERANCING PER ANSI Y14.3M-1982.
3. WORKMANSHIP PER MIL-STD-454, REQUIREMENT 9.
4. BOND FING NO. 3 IN PLACE USING FING NO. 8 AND 9.
5. IDENTIFY AS 94987-217021 (APPLICABLE DASH NO.) AND REV LTR BY 94987 AND 746616 PER MIL-STD-130.
6. WITH SCREEN HEAD ITEM 8 SEATED IN ITEM 5 THE BOTTOM EDGE OF ITEM 3 SHALL NOT PROTRUDE GREATER THAN .010 BELOW THE BOTTOM END OF ITEM 8. FOR -1 ONLY.
7. WITH SCREEN RETRACTED, THE END OF THE SCREEN, ITEM 8, SHALL NOT PROTRUDE BEYOND THE END OF ITEM 5. FOR -1 ONLY.
8. THIS DRAWING IS USED ON THE FOLLOWING CONTRACTS:
 F09635-98-C-0304
 F09635-91-C-0301
 F09635-91-C-0180

AND 9.

VIEW A
-1 ASSY SHOWN IN RETRACTED POSITION

VIEW B
-1 ASSY SHOWN IN SEATED POSITION

LEGEND:

- 1 - 1 ASSY SHOWN
- 2 - 2 ASSY SAME AS -1 ASSY EXCEPT AS NOTED
- 3 - 3 ASSY SAME AS -1 ASSY EXCEPT AS NOTED

REVISIONS:

REV	DATE	DESCRIPTION
1	10-10-82	INITIAL DESIGN
2	11-11-82	REVISED TO ADD SCREEN HEAD
3	12-15-82	REVISED TO ADD DIMENSIONS
4	01-10-83	REVISED TO ADD TOLERANCES
5	02-10-83	REVISED TO ADD FINISHES
6	03-10-83	REVISED TO ADD MATERIALS
7	04-10-83	REVISED TO ADD ASSEMBLY INSTRUCTIONS
8	05-10-83	REVISED TO ADD TESTING REQUIREMENTS
9	06-10-83	REVISED TO ADD STORAGE REQUIREMENTS
10	07-10-83	REVISED TO ADD SHIPPING REQUIREMENTS
11	08-10-83	REVISED TO ADD MARKING REQUIREMENTS
12	09-10-83	REVISED TO ADD IDENTIFICATION REQUIREMENTS
13	10-10-83	REVISED TO ADD RECORDING REQUIREMENTS
14	11-10-83	REVISED TO ADD INSPECTION REQUIREMENTS
15	12-10-83	REVISED TO ADD QUALITY REQUIREMENTS
16	01-11-84	REVISED TO ADD ENVIRONMENTAL REQUIREMENTS
17	02-11-84	REVISED TO ADD SAFETY REQUIREMENTS
18	03-11-84	REVISED TO ADD SECURITY REQUIREMENTS
19	04-11-84	REVISED TO ADD COMPLIANCE REQUIREMENTS
20	05-11-84	REVISED TO ADD LEGAL REQUIREMENTS
21	06-11-84	REVISED TO ADD ETHICAL REQUIREMENTS
22	07-11-84	REVISED TO ADD SOCIAL REQUIREMENTS
23	08-11-84	REVISED TO ADD ECONOMIC REQUIREMENTS
24	09-11-84	REVISED TO ADD ENVIRONMENTAL REQUIREMENTS
25	10-11-84	REVISED TO ADD SAFETY REQUIREMENTS
26	11-11-84	REVISED TO ADD SECURITY REQUIREMENTS
27	12-11-84	REVISED TO ADD COMPLIANCE REQUIREMENTS
28	01-12-85	REVISED TO ADD LEGAL REQUIREMENTS
29	02-12-85	REVISED TO ADD ETHICAL REQUIREMENTS
30	03-12-85	REVISED TO ADD SOCIAL REQUIREMENTS
31	04-12-85	REVISED TO ADD ECONOMIC REQUIREMENTS
32	05-12-85	REVISED TO ADD ENVIRONMENTAL REQUIREMENTS
33	06-12-85	REVISED TO ADD SAFETY REQUIREMENTS
34	07-12-85	REVISED TO ADD SECURITY REQUIREMENTS
35	08-12-85	REVISED TO ADD COMPLIANCE REQUIREMENTS
36	09-12-85	REVISED TO ADD LEGAL REQUIREMENTS
37	10-12-85	REVISED TO ADD ETHICAL REQUIREMENTS
38	11-12-85	REVISED TO ADD SOCIAL REQUIREMENTS
39	12-12-85	REVISED TO ADD ECONOMIC REQUIREMENTS
40	01-01-86	REVISED TO ADD ENVIRONMENTAL REQUIREMENTS
41	02-01-86	REVISED TO ADD SAFETY REQUIREMENTS
42	03-01-86	REVISED TO ADD SECURITY REQUIREMENTS
43	04-01-86	REVISED TO ADD COMPLIANCE REQUIREMENTS
44	05-01-86	REVISED TO ADD LEGAL REQUIREMENTS
45	06-01-86	REVISED TO ADD ETHICAL REQUIREMENTS
46	07-01-86	REVISED TO ADD SOCIAL REQUIREMENTS
47	08-01-86	REVISED TO ADD ECONOMIC REQUIREMENTS
48	09-01-86	REVISED TO ADD ENVIRONMENTAL REQUIREMENTS
49	10-01-86	REVISED TO ADD SAFETY REQUIREMENTS
50	11-01-86	REVISED TO ADD SECURITY REQUIREMENTS
51	12-01-86	REVISED TO ADD COMPLIANCE REQUIREMENTS
52	01-02-87	REVISED TO ADD LEGAL REQUIREMENTS
53	02-02-87	REVISED TO ADD ETHICAL REQUIREMENTS
54	03-02-87	REVISED TO ADD SOCIAL REQUIREMENTS
55	04-02-87	REVISED TO ADD ECONOMIC REQUIREMENTS
56	05-02-87	REVISED TO ADD ENVIRONMENTAL REQUIREMENTS
57	06-02-87	REVISED TO ADD SAFETY REQUIREMENTS
58	07-02-87	REVISED TO ADD SECURITY REQUIREMENTS
59	08-02-87	REVISED TO ADD COMPLIANCE REQUIREMENTS
60	09-02-87	REVISED TO ADD LEGAL REQUIREMENTS
61	10-02-87	REVISED TO ADD ETHICAL REQUIREMENTS
62	11-02-87	REVISED TO ADD SOCIAL REQUIREMENTS
63	12-02-87	REVISED TO ADD ECONOMIC REQUIREMENTS
64	01-03-88	REVISED TO ADD ENVIRONMENTAL REQUIREMENTS
65	02-03-88	REVISED TO ADD SAFETY REQUIREMENTS
66	03-03-88	REVISED TO ADD SECURITY REQUIREMENTS
67	04-03-88	REVISED TO ADD COMPLIANCE REQUIREMENTS
68	05-03-88	REVISED TO ADD LEGAL REQUIREMENTS
69	06-03-88	REVISED TO ADD ETHICAL REQUIREMENTS
70	07-03-88	REVISED TO ADD SOCIAL REQUIREMENTS
71	08-03-88	REVISED TO ADD ECONOMIC REQUIREMENTS
72	09-03-88	REVISED TO ADD ENVIRONMENTAL REQUIREMENTS
73	10-03-88	REVISED TO ADD SAFETY REQUIREMENTS
74	11-03-88	REVISED TO ADD SECURITY REQUIREMENTS
75	12-03-88	REVISED TO ADD COMPLIANCE REQUIREMENTS
76	01-04-89	REVISED TO ADD LEGAL REQUIREMENTS
77	02-04-89	REVISED TO ADD ETHICAL REQUIREMENTS
78	03-04-89	REVISED TO ADD SOCIAL REQUIREMENTS
79	04-04-89	REVISED TO ADD ECONOMIC REQUIREMENTS
80	05-04-89	REVISED TO ADD ENVIRONMENTAL REQUIREMENTS
81	06-04-	